DOCUMENT RESUME

ED 175 744 SO 011 886

AUTHOR Holmes, Cary W.; Tedesco, Paul H.
TITLE Teacher's Guide to Canal. The Middlesex Canal: A Pole Playing Exercise.
INSTITUTION Federal Reserve Bank of Boston, Mass.
PUB DATE 75
NOTE 38p.; For related documents, see SO 011 887 and ED 100 764
AVAILABLE FROM Publication Information Center, Federal Reserve Bank of Boston, Boston, Massachusetts 02106 (free)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Decision Making; Economic Factors; Educational Objectives; Instructional Materials; *Problem Solving; *Role Playing; Secondary Education; Simulation; Teaching Procedures; *Transportation; *United States History
IDENTIFIERS *New England

ABSTRACT

The document consists of a role-playing game and related teacher's guide designed to illustrate decision-making processes leading to the building of the Middlesex Canal in Massachusetts in 1793. The primary educational objective is to involve students in the decision-making process through role play. The game is designed to facilitate consideration of economic problems preceding construction; known economic, social, and political facts; and a wide range of alternative actions and their consequences. The teacher's guide describes the game, which takes place in 1792 in Boston. The game involves 19 players, whose problem is whether to invest capital in the building of the canal. Teacher and student materials are listed, decision rules are noted, and nine suggestions for orientation are made. The guide includes a checklist intended to measure student data comprehension and interpretation, as well as 14 lead-in questions. The game itself contains one page noting the objective, time, and place, listing the cast, and stating the problem. Materials include 19 profile cards describing each role's vita, nine correspondence, population, and economic cards containing background information, an overview of the geography of the New England region, and a map of 1790 New England. Other relevant documents include a case study of the Middlesex Canal (SO 011 887) and a set of gas station maps of New England to be obtained by the teacher. "Teaching with Case Studies" (ED 100 764) would be helpful in using the material. (CK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Paul H. Iodesco

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Teacher's Guide To

ED175744

CANAL

The Middlesex Canal: A Role Playing Exercise

SO 011 486

This material is part of Towpaths to Oblivion: The Middlesex Canal and the Coming of the Railroad, 1792-1853, by Cary W. Holmes and Paul H. Tedesco in CASE STUDIES IN BUSINESS HISTORY AND ECONOMIC LIFE — Second Series edited by Ralph W. Hidy, Harvard University and Paul H. Tedesco, Northeastern University.

Copyright © 1975
Business History and Economic Life Program, Inc.
Written and Developed by Cary W. Holmes and Paul H. Tedesco

Copies of this publication
are available, upon request, from the
PUBLIC INFORMATION CENTER
FEDERAL RESERVE BANK OF BOSTON
BOSTON, MASSACHUSETTS 02106

3/75 100
11/75 300
6/76 400
2/79 1M

THE TEACHER'S GUIDE FOR CANAL GAME

In an age when it appears relatively easy to glibly define this or that as a game or simulation, CANAL somewhat defies definition. CANAL is called a game to facilitate ease of handling, but it is most likely an attempt to develop an effective role-playing simulated decision-making process.

The following guide is meant to be just that, a guide. The teacher may do as he or she wishes, but all the materials, including the remaining portions of the Middlesex Canal case, should be read by the teacher before any attempt is made to interact with students. It is also important to remember that the completed case need never be given to the students, as teaching goals can be accomplished with just CANAL.

1. STUDENT OBJECTIVES

To wrestle with the economic problems faced by Boston merchants immediately preceding the construction of the Middlesex Canal.

To discover how one arrives at a decision in light of certain known economic, social, and political facts by playing the roles of actual participants in a decision-making process.

To understand the range of alternatives that always exist in the decision-making process by playing different roles.

2. SCOPE

The Game:

Time — early evening, December 7, 1792.
Place — upper room, THE BUNCH OF GRAPES Tavern, Boston.

Reality:

The teacher has to decide how much time should be spent on the game. The time decision depends on how the Interaction Sequence (see 7 below) is established.

3. ACTORS

There are 19 roles in CANAL. The key figures are Baldwin, Cobb, Craigie, Russell, and Sullivan. One student can play the Hall brothers reducing the number of roles to 15. The teacher should make a choice depending upon the class size or grouping needs. A teacher may decide that the game will be played by one group of students and observed by another. The method chosen should maximize the student objectives.

4. ACTORS OBJECTIVES

The prime object of CANAL is to answer the question whether or not I (any of 19 roles) should invest my capital in the building of this canal venture?

5. RESOURCES

Teacher materials:

1. Complete Middlesex Canal Case
2. Game CANAL with Teacher's Guide
3. Class set of gas station maps of New England (Teacher must procure these maps locally.)

Student materials:

1. Game CANAL including all profile cards, population cards, economic cards, correspondence cards, geographic statement, and map exhibits.

6. DECISION RULES

Decisions are made individually. The group can agree that the game ends when they have reached either a consensus or a majority decision.

7. INTERACTION SEQUENCE

The teacher has a wide range of options in playing CANAL. The amount of time that the game takes is dependent upon the interaction sequence that the teacher establishes and the rapport that already exists with the students.

It is suggested that the teacher lead up to the actual decision-making process by the following sequence:

1. Attempt some physical change of the classroom which will facilitate group and individual interaction.
2. Spend time with students plotting major geographical features of New England on gas station maps.
3. Discuss climate, resources, etc.
4. Give students CANAL to read overnight.
5. Assign roles as part of discussion procedures.
6. Plot census data on maps.
7. Interpret shipping statistics.
8. Slowly move into the role play.
9. Begin decision-making process.

Time consumption would be dependent on how the above suggested sequence is used.

The teacher's role is not eliminated — it becomes more important as the student interaction increases.

The teacher must remember that CANAL and case method teaching is predicated on the belief that we learn by doing.

The students should learn to think through the problem not necessarily for the intellectual enjoyment of the thinking process, but to find a possible solution to a vexing problem.

The students should be made to see that once a possible solution is achieved that act leads to other decision requirements.

THE TEACHER'S ROLE IS NOT PASSIVE — IT IS ACTIVE!

You must listen carefully to see that students fully develop an "although-however" approach which will insure a thoroughness of consideration and avoid the arbitrariness of snap judgments. If need be, the teacher can enter the discussion with a key question.

Remember that the length of CANAL has not been determined. It has also not been established whether CANAL alone can accomplish all that the Middlesex Canal case has intended.

1. The teacher may decide to use only CANAL
2. The teacher may decide to use the entire case.

It is suggested that three days be alloted for the case, game, or combination at minimum.

8. CONSTRAINTS
   See No. 6.

9. SCORING RULES
   None. There is no winner in CANAL

10. SEQUENCE OF ACTION
    Variable.

SUGGESTED GUIDE QUESTIONS

The following questions and/or ideas are meant as a guide to the teacher to assist in seeing the variables that might be checked before deciding upon an approach to the game.

1. Determine whether the students can interpret material dealing with population and census data?
   a. Can the students utilize census data to determine social patterns?
   b. Can the students place towns on outline maps or gas station maps by size and location?
   c. Can the students determine certain population masses and why they are located in certain areas?
   d. Can the students enumerate the advantages and disadvantages of certain locations?

2. Determine whether the students can interpret population figures and competition factors?
   a. What was the percentage of tonnage coming into the Boston-Salem area as compared with other ports of entry?
   b. What are Boston's advantages/disadvantages over other ports?
   c. What are the products being shipped? Domestic? Foreign?
   d. How can exports be ranked economically?
   e. What are the constraints of the lumber business?
   f. How would you ship goods if you were a merchant in Worcester? In the Plymouth, New Hampshire area?

3. Determine whether the students comprehend the interplay between economics and geography?

4. Check, by subtle questions, whether the students have utilized the material on the profile cards:
   a. Thomas Russell and the Charles River Bridge Project — was a bridge the answer to Boston's problem? Did Sullivan have similar experience?
   b. What was wrong with General Knox's canal scheme?
   c. What knowledge did David Cobb have which might give him an edge over the others?

As a possible aid to your use of this game, the following sequence of questions might be asked by the teacher or a primed student as a lead into the problem:

1. How can we keep the city, the state, and ourselves prosperous?
2. Are there others who might join us?
3. Are there any other ways we can divert traffic in goods from New Haven to the Boston-Salem area?
4. Where are we going to get the goods we need to stay in business?
5. Can we afford to ship such goods into Boston and pay current teamster rates?
6. What do we have that interior New England needs?
7. Exactly what are our alternatives?

Keep in mind that CANAL hopes to help the students to synthesize prior thinking so that they (the students) may have other priority questions.

Suggestions are:
1. Improve land transport? What about time? Quality? Quantity?
2. Establish agents in Newburyport or New Haven? Why ship to Boston at all?
3. Does the quality of Boston's harbor override all other considerations?
4. Leave Boston? Where do you go? Why?
5. What technology do we have to resolve this problem? in 1792? Now?
6. Was Knox's plan really impractical — short-sighted?
7. Let's build a canal. What is a canal? How do we build a canal? Who builds it? Why build it? You might want to circulate a small collection of pictures showing a canal.

The teacher must spend a fair amount of time planning the strategy of the game. You should decide where you would like the game to go, but prepare for other exigencies that the students might interject. Whatever the students decide, if valid, is really the direction of CANAL. The primary objective of CANAL is to engage the students in the decision-making process.

CANAL

OBJECTIVE:

To show you some of the economic pressures and social interaction that operated in the historical process of industrialization by involving you in THE DECISION OF WHETHER OR NOT A GROUP OF BOSTON-BASED SPECULATORS, MERCHANTS, AND CITIZENS SHOULD INVEST IN A CANAL VENTURE.

THE TIME:

The early evening of December 7, 1792.

THE PLACE:

The upper room of THE BUNCH OF GRAPES TAVERN, at the corner of King Street and Mackeril Lane (now State and Kilby Streets). THE BUNCH OF GRAPES was known as the best punch house in Boston. This hostelry was a favorite watering-place for Paul Revere and his friends of the Whig Club; John Hancock and the Adams' also liked to stop here. THE BUNCH OF GRAPES was famous for its organizational history: in 1733 the first Lodge of the Masonic Order in America gathered here, in 1787 the Society of Cincinnati was established here, and the Massachusetts Humane Society was conceived over its famous punch bowl.

THE CAST:

Loammi Baldwin	Joseph Hall
Joseph Barrell	Richard Hall
John Brooks	General Henry Jackson
David Cobb	Samuel Jacques
Andrew Craigie	Jonathan Porter
Christopher Gore	Thomas Russell
Captain Ebenezer Hall	Ebenezer Storer
Benjamin Hall	Caleb Swan
Dudley Hall	James Winthrop
James Sullivan	organizer of the meeting

THE PROBLEM

General Henry Knox, Secretary of War, has agitated for some of east-west traffic pattern since his difficulties during the late Revolutionary War. He had originally thought it possible to build a canal from Boston to the Connecticut River and beyond (Albany). General Knox had a company incorporated by the General Court of the Commonwealth of Massachusetts, but nothing came of this venture.

James Sullivan, an experienced civil engineer like Knox, thought a canal building project was possible. But unlike Knox, Sullivan saw greater possibilities for a canal built from Boston north towards Chelmsford (Lowell) and on to New Hampshire. Mr. Sullivan has asked 18 men to meet with him at THE BUNCH OF GRAPES to consider investing in such a canal. YOU HAVE TO DECIDE WHETHER OR NOT YOU WILL INVEST?

Profile Card No. 1 **BALDWIN**

Loammi Baldwin was born on January 21, 1745, in Woburn, Massachusetts. He was apprenticed to a cabinet maker, but became a land surveyor-engineer. Much of his education was obtained by attending lectures at Harvard College given by Professor John Winthrop. Mr. Baldwin was active during the late war. He was discharged in 1777 for ill-health with the rank of colonel, commanding a foot regiment. Mr. Baldwin served in the General Court of the Commonwealth of Massachusetts, 1778-1779. In 1780, he was appointed High Sheriff of Middlesex County. Although he was regarded as a country squire, Mr. Baldwin's service to his own community, the state, and the nation was duly recognized by Harvard College when they conferred upon him an honorary Master of Arts degree in 1785. Mr. Baldwin was the engineer-in-charge on the Charles River Bridge Project.

Profile Card No. 2 **BARRELL**

Mr. Barrell is a resident of Charlestown and a merchant of some reputation.

Profile Card No. 3 **BROOKS**

Mr. Brooks served in the Continental Army. Upon the cessation of hostilities, he became a United States marshal under the new constitutional government. Mr. Brooks is a native and resident of Medford, Massachusetts.

Profile Card No. 4 **COBB**

David Cobb was born, September 18, 1748, in Attleborough, Massachusetts. He graduated from Harvard College in 1766, studied medicine, and established a practice in Taunton, Massachusetts. He joined a Massachusetts line regiment as a field surgeon shortly after the Battles of Lexington and Concord. Lt.-col. Cobb served with distinction in Henry Jackson's 16th Massachusetts. At war's end, Colonel Cobb commanded the 5th Massachusetts. Breveted a brigadier-general, Doctor Cobb decided to enter public life and he served as a judge in Bristol County. He was elected to the General Court of the Commonwealth and was elected Speaker of the Massachusetts House of Representatives in 1789. He has just successfully stood for election to the United States House of Representatives. Judge Cobb is very knowledgeable about the Maine district.

Profile Card No. 5 **CRAIGIE**

Andrew Craigie was born in Boston, June 7, 1743. He was educated at the Boston Latin School. During the Revolutionary War, Mr. Craigie served as Apothecary-General of the Continental Army with the rank of Lieutenant-colonel. He is a member of the Society of the Cincinnati and a director of the First United States Bank. Mr. Craigie deals in the speculation of land and government certificates. He has had some dealings with the Scioto Associates.

Profile Card No. 6 **GORE**

Mr. Gore is a wealthy land-owner with large holdings in Waltham, Massachusetts. He is socially prominent in Boston and Essex County society.

Profile Card No. 7,8,9,10,11 **HALL FAMILY**

The five Hall brothers (Captain Ebenezer Hall, Benjamin Hall, Dudley Hall, Joseph Hall, and Richard Hall), residents of Medford, Massachusetts, are very active land speculators.

Profile Card No. 12 **JACKSON**

General Jackson is known to be the political henchman of General Henry Knox, Secretary of War, in Massachusetts.

Profile Card No. 13 **JACQUES**

Samuel Jacques lives in Wilmington, Massachusetts. There is nothing that is particularly distinguished about his career — he is regarded as a commoner.

Profile Card No. 14 **PORTER**

Jonathan Porter is a resident of Medford, Massachusetts. Regarded as a very practical man, Mr. Porter has been known to speculate in land.

Profile Card No. 15 **RUSSELL**

Thomas Russell had a distinguished military career and was a personal friend of General Washington. Amongst the Boston commercial interests, Mr. Russell is regarded as a sort of marshall of merchant nobility. On March 9, 1785, Mr. Russell, John Hancock, and 82 others were incorporated by the General Court of Massachusetts to build a private toll bridge, the Charles River Bridge. The bridge, some 1,503 feet long and costing $75,000, was completed on May 31, 1786.

Profile Card No. 16 **STORER**

Ebenezer Storer is the treasurer of Harvard College.

Profile Card No. 17 **SULLIVAN**

James Sullivan was born, April 22, 1744, in Berwick, the district of Maine. A student of the law, Mr. Sullivan established a practice in Massachusetts. A King's Council member, member of the Provincial Congress of Massachusetts, in 1776 he was elected a justice in the Massachusetts Supreme Court. In 1778, Mr. Sullivan moved to Groton, Massachusetts. In 1783, he returned to Boston as an elected member of the federal congress. In 1790, Mr. Sullivan became Attorney-General of the Commonwealth of Massachusetts. He helped organize the Massachusetts Historical Society in 1791 and was its first president. He had many friends in the Medford-Woburn area. Mr. Sullivan is generally known as the orginator of the Middlesex Canal scheme you are being asked to invest in.

Profile Card No. 18 **SWAN**

A resident of Charlestown, Caleb Swan is regarded as a commoner.

Profile Card No. 19 **WINTHROP**

James Winthrop is the son of Professor John Winthrop (mathematics and science) of the Harvard College faculty. James was graduated from Harvard in 1767. He served as postmaster of the Town of Cambridge from 1772 to 1787. At present, James Winthrop is Registrar of Probate and a judge of the Court of Common Pleas.

Correspondence Card No. 1

David Cobb (Speaker, Massachusetts House of Representatives) to General Henry Knox (Secretary of War), January, 1790. Knox MS XXIII, 7.

I am persuaded that one third of all the commerce of New York depends on Vermont and New Hampshire; Countries which from nature, habits, and every other principle ought to be connected with Boston; but the lengthy and expensive land carriage prevents and in a very short time will totally destroy the little remaining connections between Boston and these states. If Boston continues its stupidity and sleeps on, she will, like those cities of Antiquity, sink into doom.

Correspondence Card No. 2

David Cobb to General Knox, February, 1791. Knox MS XXVIII, 4.

I hope you will engage a proper Engineer to survey the Country; the Gentlemen of this town expect it and are willing to support such a project. Unless this Canal from this town is built, commerce from Vermont and New Hampshire will certainly pass down the river to New York.

The Gentlemen of Trade expect within three years after such a canal is completed, a total of 28,000 to 30,000 tons of produce will come to Boston yearly. This would consist primarily of Pot and Pearl Ashes, Flaxseed, Flax and Hemp, Beef and Pork, Grain of all kinds, Flour, Hoops, Staves, and most importantly Timber and Planks.

Correspondence Card No. 3

Captain John Hill (surveyor/engineer?) to General Knox, April, 1791. Knox MS.

In doing the survey, I did not use any levels. I can safely say, though, that a canal of such magnitude will attend very heavy expense and is far beyond my Art.

Population Card No. 1

TOTAL AND URBAN POPULATION OF THE U.S., 1700–1790[1]

Year	Total Population	Places of 8,000 and over		
		Number	Population	Per cent of total
1700	275,000	–	–	–
1710	357,500	1	9,000	2.5
1720	474,383	1	11,000	2.3
1730	654,950	3	30,000	4.6
1740	889,000	3	38,500	4.3
1750	1,207,000	3	42,431	3.5
1760	1,610,000	4	56,387	3.5
1770	2,205,000	5	84,383	3.8
1780	2,781,000	5	76,000	2.7
1790	3,929,625	6	131,396	3.3

[1]W. S. Rossiter, *A Century of Population Growth* (Washington, D. C.: Government Printing Office, 1909), p.15.

Population Card No. 2

POPULATION OF THE SEAPORT CITIES, 1710–1790[1]

Year	Philadelphia (and suburbs)	New York	Boston	Baltimore
1710	–	–	9,000	–
1720	–	–	11,000	–
1730	8,500	8,500	13,000	–
1740	10,500	11,000	17,000	–
1750	13,400	13,300	15,731	–
1760	18,756	14,000	15,631	–
1770	28,000	21,000	15,520	–
1780	30,000	18,000	10,000	8,000
1790	42,444	33,131	18,038	13,503

[1] Rossiter, *op.cit.*, p. 11.

Population Card No. 3

CATEGORIES OF POPULATION CENTERS IN THE NEW ENGLAND STATES, 1790[1]

1. Connecticut (90 towns):
   - 2 Largest towns – Litchfield (20,278), Norwalk-Stamford (8,810)
   - 16 Towns between 3,000-5,000 (e.g. Danbury, Fairfield, Greenwich, Hartford, New Haven, Saybrook, Wethersfield)
   - 51 Towns between 1,000-2,000
   - 15 Towns appear to average 500

2. Maine (153 towns):
   - 1 Largest town – Scarborough (4,476)
   - 3 Towns with 3,000-5,000 (Berwick, Kittery, Wells)
   - 4 Towns with 2,000-3,000
   - 20 Towns with 1,000-2,000
   - 125 Towns appear to average between 350-500

3. Massachusetts (279 towns):
   - 2 Largest towns – Boston (18,038), Salem (7,917)
   - 2 Towns between 5,000-6,000 (Gloucester, Marblehead)
   - 10 Towns between 3,000-5,000 (e.g. New Bedford, Taunton, Ipswich, Newbury, Newburyport, Bridgewater)
   - 25 Towns between 2,000-3,000
   - 103 Towns between 1,000-2,000
   - 137 Towns appear to average between 500-750

4. New Hampshire (197 towns):
   - 1 Largest town – Portsmouth (4,720)
   - 6 Towns between 2,000-3,000 (e.g. Amherst, Londonderry, Barrington)
   - 41 Towns between 1,000-2,000 (e.g. Concord)
   - 149 Towns appear to average between 375-400

5. Rhode Island (30 towns):
   - 2 Largest towns – Newport (6,744), Providence (6,371)
   - 3 Towns between 3,000-4,000 (Gloucester, Smithfield, Kingston)
   - 11 Towns between 2,000-3,000 (e.g. Coventry, Warwick, Tiverton)
   - 10 Towns between 1,000-2,000
   - 4 Towns appear to average between 550-600

[1] Rossiter, *op.cit.*, p. 15.

Economic Card No. 1

EXPORT CHART

1. Salem – headquarters for Pacific and East Indian trade (ginseng was shipped to China for silk and spices; also exported beef, pork, flour, wheat)

2. Newport (R.I.), New Haven (Conn.), New London (Conn.), and New York – centers for West Indian trade (lumber, livestock, grain, farm produce)

3. Boston – exported rum to Africa; potash and pear ashes to Great Britain; lumber to Great Britain and the West Indies; dried fish to the French and Dutch West Indies; whale oil and whalebone to France

Economic Card No. 2

TONNAGE OF SHIPS ENTERING NEW ENGLAND PORTS, 1790[1]

	Total (All Nations)	U.S. Owned Ships		
		Overseas	Coastal	Fishing
Portsmouth	17,011	11,376	1,670	473
Boston/Salem	197,368	99,123	53,073	24,826
New Haven/ New London	33,173	24,287	6,330	–
Newport	9,842	7,062	1,626	838
New York	92,114	42,071	6,205	–

[1] Rossiter, *op.cit.*, p. 30.

Economic Card No. 3

DOCUMENTED MERCHANT VESSELS[1]
(In thousands of tons)

Year	Total Documented Vessels Gross Tons	Trade in which engaged		
		Foreign Trade	Coastwise and Internal[2]	Cod and Mackerel Fisheries
1789	202	124	69	9
1790	478	346	104	28
1791	502	363	106	33
1792	564	411	121	32

[1] U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1957* (Washington, D. C.: Government Printing Office, 1960)p.445.

[2] Includes canal boat and canal barge traffic.

THE GEOGRAPHY OF THE NEW ENGLAND REGION

The New England Region comprises the states of Connecticut, Massachusetts, New Hampshire, and Rhode Island. The District of Maine is a part of the Commonwealth of Massachusetts. The states of New Hampshire and New York are disputing the ownership of the large land mass between them.

The New England Region is located in a temperate zone with four seasons of approximate equality in length.

Variations in climate are caused by wind direction. The wind moves primarily West to East in New England. The region juts into the Atlantic Ocean so that it is fairly near the Gulf Stream. Weather systems from two directions determine the major weather structure of the region: from Hudson's Bay and the southeastern coastal region.

Precipitation is well distributed throughout the year. Heavy snowfalls are common in the northernmost parts of the region.

The temperature ranges from minus 20 to plus 100 degrees.

The soil of the region is acidic and stony, covered by many pine forests and interjected with a few large, slowly moving rivers. The region is hilly near the coast creating many small and medium rivers, steep and fast flowing with many waterfalls.

The interior of the region is dominated by three mountain ranges — Berkshires, Green, and White — all part of the Appalachian chain.

The climate and topography of the region severely limit the amount of agricultural production possible. The natural geographic conditions point towards a combination of economic resources on the mountains and in the ocean.

MAP EXHIBIT NO. 1

1790 — "The Frontier Line"

MAP EXHIBIT NO. 2

Each student or group of students should have a set of gas station maps of the New England region.